

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-013845**Date Inspected:** 06-May-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

CWI Inspectors: Mr. Li Yang, Mr. Xu Xian Ping, Mr. Geng Wei

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Li Jun, stencil 051348 is using shielded metal arc welding procedure specification WPS-345-SMAW-2G(2F)-Repair-1 to complete OBG corner assembly critical weld repair CA3006-004 in the 2G position. This QA Inspector measured a welding current of approximately 170 amps and that Mr. Li Jun appears to be certified to perform this welding. This QA Inspector performed a document review of critical weld repair document B-CWR-1451 and observed step 3D states the CWI shall verify the welder understand that the weld starts and stops that will impact fusion will be ground. This QA Inspector observed Mr. Li Jun used a chipping hammer to remove welding slag and Mr. Li Jun did not appear to be using a grinder to clean the weld starts and stops. This QA Inspector informed CWI Mr. Zhu Zhong Hai of the critical weld repair requirements and Mr. Zhu Zhong Hai said he had recently observed Mr. Li Jun to be adequately cleaning the welding starts and stops. This critical weld repair document also requires the base material to be preheated with electrical heating elements to a minimum of 160 degrees Celsius and that this heat is to be maintained through the welding cycle and maintained for a period of time as part of the post weld heat treatment. This QA Inspector

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observed the adjacent base material was at an elevated temperature, but it appears to be less than the required 160 degree Celsius. This QA Inspector informed CWI Mr. Zhu Zhong Hai that the base material temperature is below the minimum of 160 degree Celsius and Mr. Zhu Zhong said ZPMC will re install the electric heater to keep the base material warm. Approximately 30 minutes after completion of the welding this QA Inspector observed the base material on one side of the repair is approximately 160 degree Celsius and the other side is approximately 63 degrees Celsius. This QA Inspector informed ZPMC QC Inspector the base material adjacent to the weld repair does not appear to be maintained to a minimum of 160 degrees on one side of the weld repair. The temperature measurements were obtained using a ZPMC owned infrared type temperature measurement device. Items observed on this date do not appear to fully comply with applicable contract documents. See the photographs below for additional information.

This QA Inspector observed ZPMC welder Ms. Hue Junrong, stencil 201215 is using flux cored welding procedure WPS-B-T-2232-TC-U4b-F to make OBG weld SEG3006E-139. This weld is located in OBG segment 12CW. This QA Inspector observed a welding current of approximately 300 amps and 30.0 volts and the base material appears to have been being preheated by a torch prior to welding. This QA Inspector observed that Ms. Hue Junrong appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Xianyou, stencil 047866 is using flux cored welding procedure WPS-B-T-2233-TC-U4b-F to make OBG weld SEG3006E-136. This QA Inspector observed that Mr. Xi Xianyou appears to be certified to make this weld. This QA Inspector observed ZPMC QC has recorded a welding current of 202 amps and 24.5 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Ji Yi, stencil 045268 is using shielded metal arc process to tack weld a temporary plate to OBG segment 12C deck plate DP3046-001. This plate appears to be intended to maintain alignment of the two OBG deck plates as the various weld joints are brought into alignment. This QA Inspector observed the welding electrodes are being stored in a portable electrode storage oven that is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

Yard behind OBG bay 19

This QA Inspector observed ZPMC welder Mr. Bi Xiaofei, stencil 045204 is using shielded metal arc procedure WPS-B-P-2113-FCM-1 to make various repair welds of visual rejections in OBG segment 10AW between panel point 86 and 87. This QA Inspector observed Mr. Bi Xiaofei appears to be certified to make this weld and the shielded metal arc welding electrodes are being stored in an electrically heated electrode storage container which is warm to the touch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Ge Hao, stencil 201583 has been using welding procedure WPS-B-P-2232 to make OBG segment 10AW weld SSD11A-62. This QA Inspector observed ZPMC QC Inspector Mr. Li Ping is monitoring this welding and Mr. Ge Hao appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

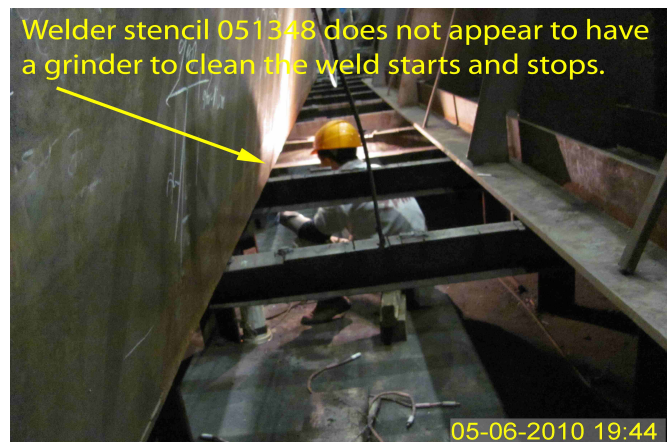
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Segment Trial Assembly

ABF issued "Inspection Notification Sheet" number 05052010-2 item #1 informing QA that on 05-06-2010 at 19:00 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld CA051-004 which joins OBG segment 8BE deck plate and edge plate on the cross beam side. This weld is located in the trial assembly area. At around 21:00 hours Caltrans QA Inspector Mr. Mike Hasler was informed by ABF/Sense UT Inspectors that the repair area at 11870 mm is UT acceptable. This QA Inspector performed ultrasonic inspections of the repair location as listed on the UT report data sheet for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no UT rejections were observed. Items observed on this date appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documents. See the TL-6027 UT report for additional information concerning this inspection.

ABF issued "Inspection Notification Sheet" number 05062010-1 item #6 informing QA that on 05-06-2010 at 23:30 hours ABF Inspectors will be performing ultrasonic (UT) inspections of repaired weld OBE8B-003 which joins OBG bottom plates between segments 8AE and 8BE. This weld is located in the trial assembly area. Caltrans QA Inspector Mr. Mike Hasler had been informed by ABF/Sense UT Inspectors that the four weld repair areas are UT acceptable. This QA Inspector performed ultrasonic inspections of locations 3610 mm and 6620 mm for detection of longitudinal and planar transverse indications utilizing scanning patterns A, B, C and D (AWS D1.5 Fig 6.7) and no UT rejections were observed. Caltrans QA Inspector Mr. Daniel Barretine performed UT inspections of two other repair areas of this same weld. Items observed on this date appeared to generally comply with applicable contract documents. Note: These inspections are being documented and tracked on "Verification Witness Request" documents. See the TL-6027 UT report for additional information concerning this inspection.



Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer
